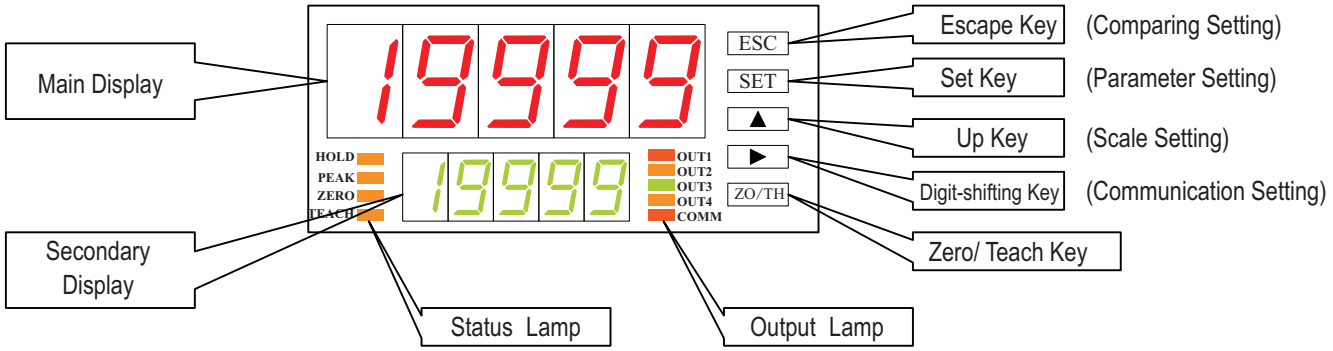
VM2 Load Cell Panel Meter User Manual (High Resolution) Ver : 1.12



❖ Function Introduction

❑ Main Display

To display input weight at present or parameter items in setting mode.

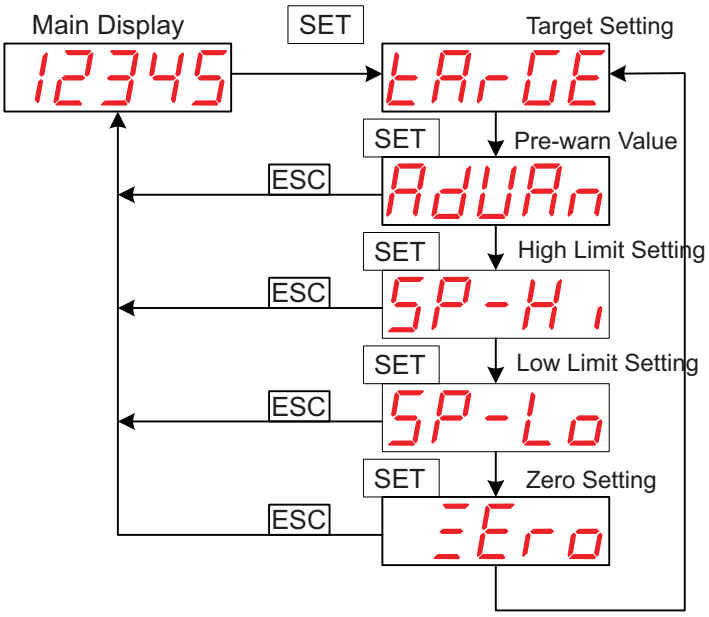
❑ Secondary Display

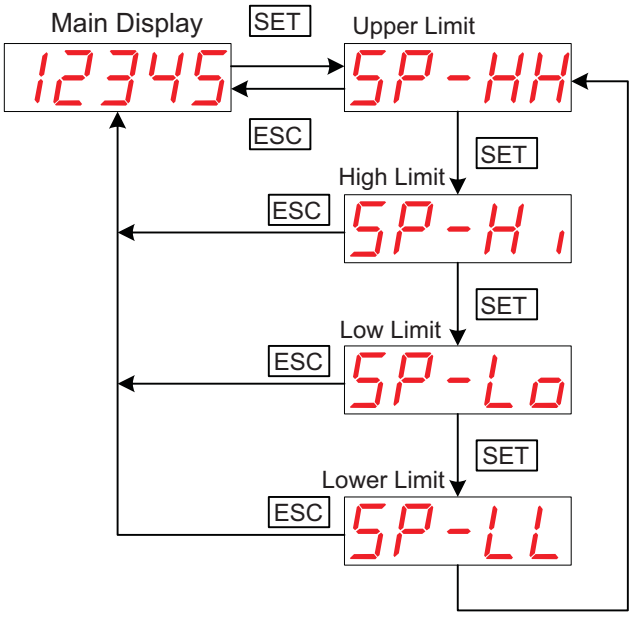
To display Set Value in running mode or parameter values in setting mode.

❑ Button Introduction

ESC	To cancel settings or return to Main Display.
SET	To enter parameter setting mode or confirm settings.
▲	To change value in setting mode or set scale value and decimal place.
▶	To change the digit to set or change option items directly in setting mode.
▲ + ▶	Press for 1 sec. to clear Peak record.
ZO/TH	Press for 1 sec. to force zeroing.
▶ + ZO/TH	Press for 1 sec. to cancel forced zeroing.

❖ Instruction of Operation & Setting





Parameter List & Introduction

	Item	Display	Setting Range	Function Introduction
General Setting	Selecting Input	AdSEL	20/40 mV	To selecting the range of input signal.
	Filter	FiLtE	none / fast / normal / slow / slowest	To filter the surge and regular jitter of input signal.
	Movable Average	n-AUG	1 ~ 16	To filter out noise, making display more stable.
	Simple Average	S-AUG	1 ~ 16	To slow down the display to make it more stable.
	Zero Time	ZErotE	0 ~ 9.9 Sec	Tracking time of auto zeroing.
	Zero Range	ZEroR	0 ~ 999	Auto zeroing range.
	Display Scale	GrAdu	1/2/5/10/20	To set the minimum increasing grade of display value.
	Input Limit	LiMit	0 ~ 99999	The maximum software limit of input signal.
	Zero Mask	L-CUt	0 ~ 999	Display 0 if input signal is lower than set range.
	Power Frequency	P-FrE	50/60 Hz	Please input corresponding work frequency according to that of the domestic electricity.
	In-1 Function	CtrL1		Input function selection of control point (see explanation below).
	In-2 Function	CtrL2		Input function selection of control point (see explanation below).
	Input Voltage	Ad-in		To view actual input voltage.
Scale Setting	Decimal Place	Point	0.0000/0.000/0.00/0.0	Setting of decimal place of present value.
	Scale Mode	SCALn	2 set/5 set	To set scale setting as 2 sets or 5 sets.
	In-1 Value	in-1	-19999 ~ 99999	The input value corresponds with display ratio 1. (Can be set through TEACH.)
	Display 1 Value	dSP-1	-19999 ~ 99999	The display value corresponds with input ration 1.
	In-2 Value	in-2	-19999 ~ 99999	The input value corresponds with display ratio 2. (Can be set through TEACH.)
	Display 2 Value	dSP-2	-19999 ~ 99999	The display value corresponds with input ration 2.
	In-3 Value	in-3	-19999 ~ 99999	The input value corresponds with display ratio 3. (Can be set through TEACH.)
	Display 3 Value	dSP-3	-19999 ~ 99999	The display value corresponds with input ration 3.
	In-4 Value	in-4	-19999 ~ 99999	The input value corresponds with display ratio 4. (Can be set through TEACH.)
	Display 4 Value	dSP-4	-19999 ~ 99999	The display value corresponds with input ration 4.
	In-5 Value	in-5	-19999 ~ 99999	The input value corresponds with display ratio 5. (Can be set through TEACH.)
	Display 5 Value	dSP-5	-19999 ~ 99999	The display value corresponds with input ration 5.
	Analog Output 1	dA-Lo	-19999 ~ 99999	The displayed value corresponding to the minimum of analog output.
	Analog Output 2	dA-Hi	-19999 ~ 99999	The displayed value corresponding to the maximum of analog output.
Comparing Setting	Comparing Mode	CMP-n	Stand/Zone/Level/Peak /Mode1/Mode2/Mode3	To select output comparing mode. (See Output Explanation)
	Comparing Source	CMP-S	DISP/GROSS/PEAK/HOLD	To select output comparing source.
	Output 1	out-1	HH/HI/GO/LO/LL	5 output modes will be generated after the input signals are compared. The output contact can correspond with any of the modes. (Please see the explanation below.)
	Output 2	out-2	HH/HI/GO/LO/LL	

Item		Display	Setting Range	Function Introduction
Comparing Setting	Output 3	out-3	HH/HI/GO/LO/LL	5 output modes will be generated after the input signals are compared with set values. The output contact can correspond with any of the modes.(See explanation below.)
	Output 4	out-4	HH/HI/GO/LO/LL	
Communication	Communication Mode	C.mod.E	ASCII/RTU/STEAM	Setting of communication mode. Set according to actual application.
	Communication ID	C-id	1 ~ 255	For identifying data during communication. Can't be repeated in the same set.
	Baud Rate	C-bPS	19200/9600/4800/2400/1200	Setting of Baud rate. The higher the speed, the lower the ability of noise susceptibility.
	Communication Format	C-SEt	7O1/7E1/7N2/7O2/7E2/ 8N1/8O1/8E1/8N2	Setting of communication format. Set according to actual application.
	Ending Character	Cr-LF	ON/OFF	Add ending character in the end in STREAM mode.
	Communication Data	C-Stn	DISP/GROSS/PEAK/HOLD	Select sent data type in STREAM mode.
	Communication Delay	C-dLY	20 ~ 9999 ms	In STREAM mode, send delay time automatically.

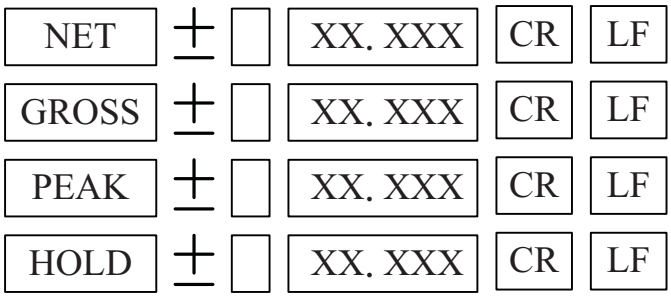
❖ Function Introduction of Input Control Contacts

ZEro	Forced Zero: To force the input value to zero. Press Shift+UP key to cancel.				
tArE	Tare: Set the input value to be deducted.				
GroSS	Display Gross Weight: The secondary display shows set value in operation and shows gross weight when this function is enabled.				
PLoCk.	Lock Panel Keys: When this function is enabled, keys on the panel can't be operated.				
HoLd	HOLD: When this function is enabled, displayed value won't change, but the value will be recorded. If comparative source is set as HOLD, then the meter will proceed comparing.				
d.PEAk.	Display Peak Value: To switch the display of the secondary window to PEAK Value.				
rPEAk.	Display Peak Value: To switch the display of the secondary window to PEAK Value, and clear PEAK record.				
H.PEAk.	Peak Value Auto Capturing: The function needs to work when the comparative mode is set as PEAK. Please see Output Mode Explanation.				
Pr int	Print: The function needs to work when the communication mode is set as STRAM. Output data types (Display, Gross, Peak, Hold) are selectable. Data is sent once per operation.				
inH ib					
nonE	No Function				
SP-HH	Set Limit Superior	SP-H ı	Set High Limit	SP-Lo	Set Low Limit
SP-LL	Set Limit Inferior	EAr GE	Set Target Value	AdUAn	Set Preset Value
S.ZEro	Set Zero Range				

Communication Format Setting：

- Protocol: Modbus RTU or ASCII, and Stream Mode
- Address (ID): 1 ~ 255
- Baud rate: 19200, 9600, 4800, 2400bps
- Data Length: 7 & 8bit
- Stop bit: 1 & 2bit
- Parity check: None, Odd, Even

- Stream Mode:
  - Stream Mode can be sent automatically or via external triggering. When the input control is selected as “Print” function, it is via external triggering; otherwise, it is automatic. The sending interval can set between 20 ~ 9999ms.
  - The sent data can be any of the following (including formats):



- Setting of Communication Contact (ModBus Mode):

Item	Format	Add	Modbus Add	Read/ Write	Description
01	bit	0000	00001	W	To force to zero. (Repeatable)
02	bit	0001	00002	W	To clear the records of minimum and maximum. 1: clear records; 0: no operation
03	bit	0002	00003	R	OUT1 Status
04	bit	0003	00004	R	OUT2 Status
05	bit	0004	00005	R	OUT3 Status
06	bit	0005	00006	R	OUT4 Status
07	word	0000	40001	R/W	Setting of the filter（None/Fast/Normal/Slow/Slowest)
08	word	0001	40002	R/W	Movable average setting. Range: 1~16
09	word	0002	40003	R/W	Simple average setting. Range: 1~16
10	word	0003	40004	R/W	Setting of decimal place.
11	word	0004	40005	R/W	Auto zeroing time. Range: 0~99 * 100 (ms)
12	word	0005	40006	R/W	Auto zeroing range. Range: 0~9999

13	word	0006	40007	R/W	Setting of display scale. 0=>1, 1=>2, 2=>5, 3=>10, 4=>20
14	word	0007	40008	R/W	Setting of zero cut. Range: 0~999
15	word	0008	40009	R/W	Frequency setting of electricity. 0=>60Hz, 1=>50Hz
16	word	0009	40010	R/W	Setting of Input Control 1. Range: 0~13
17	word	000A	40011	R/W	Setting of Input Control 2. Range: 0~13
18	word	000B	40012	R/W	Setting of comparative mode. Range: 0~6
19	word	000C	40013	R/W	Setting of comparative source. Range: 0~3
20	word	000D	40014	R	Output Status
21	dword	0032	40051	R	Present Value. Range: -19999 ~ 99999
22	dword	0034	40053	R	Value of gross weight. Range: -19999 ~ 99999
23	dword	0036	40055	R	Maximum value. Range: -19999 ~ 99999
24	dword	0038	40057	R	Hold Value. Range: -19999 ~ 99999
25	dword	003A	40059	R/W	Set value of target. Range: 0 ~ 99999
26	dword	003C	40061	R/W	Setting of preset value. Range: 0 ~ 99999
27	dword	003E	40063	R/W	Setting of zero range. Range: 0 ~ 99999
28	dword	0040	40065	R/W	Set value of superior limit. Range: 0 ~ 99999
29	dword	0042	40067	R/W	Set value of high limit. Range: 0 ~ 99999
30	dword	0044	40069	R/W	Set value of High limit of the software. Range: 0 ~ 99999
29	dword	0046	40071	R/W	Value of superior limit. Range: -19999 ~ 99999
30	dword	0048	40073	R/W	Value of high limit. Range: -19999 ~ 99999
31	dword	004A	40075	R/W	Value of low limit. Range: -19999 ~ 99999
32	dword	004C	40077	R/W	Value of Inferior limit. Range: -19999 ~ 99999
33	dword	004E	40079	R	Minimum value. Range: -19999 ~ 99999
34	word	0050	40081	R/W	Setting of display mode. 0 => Display input signal; 1 => Display communication set value
35	word	0051	40082	R/W	Setting of the decimal place of communication display value 1. Range: 0 ~ 4
36	word	0052	40083	R/W	Setting of the decimal place of communication display value 2. Range: 0 ~ 4
37	dword	0053	40084	R/W	Set value 1 of communication display. Range: -19999 ~ 99999
38	dword	0055	40086	R/W	Set value 2 of communication display. Range: -19999 ~ 99999

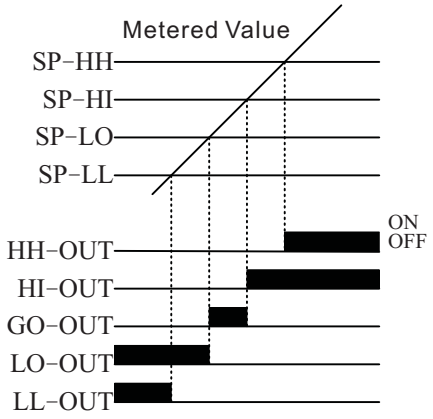
	Comparing Mode
0	Standard
1	Area
2	Level
3	Peak Mode
4	Mode 1
5	Mode 2
6	Mode 3

	Comparing Source
0	Display
1	Total
2	Peak
3	Hold

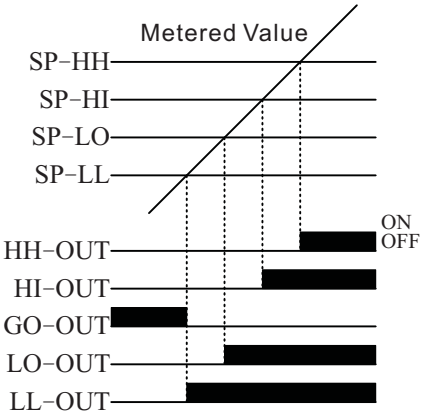
	Input Control			
0	Forced Zero	8	INHIBIT	INHIBIT
1	Deduct Gross Weight	9	Nil	Nil
2	Display Total Weight	10	Target Setting	Setting of limit superior
3	Key Lock	11	Preset Setting	Setting of upper limit
4	Display Peak	12	Upper Limit Setting	Setting of lower limit
5	Display Peak	13	Lower Limit Setting	Setting of limit inferior
6	Capture Peak	14	Zero Setting	
7	Print	15		

Comparative Output

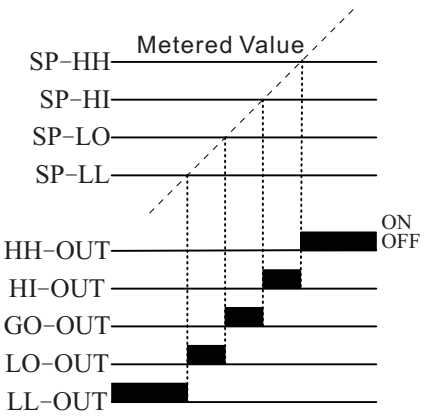
❑ STANDARD



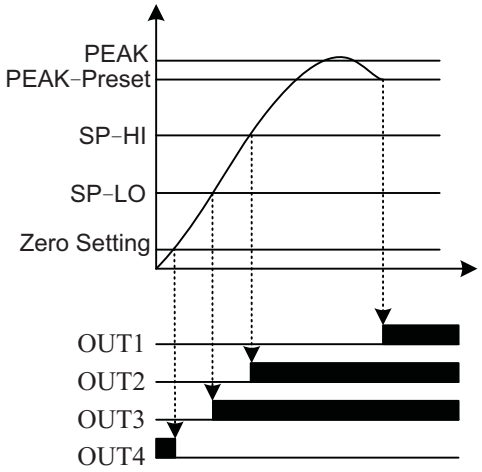
❑ ZONE



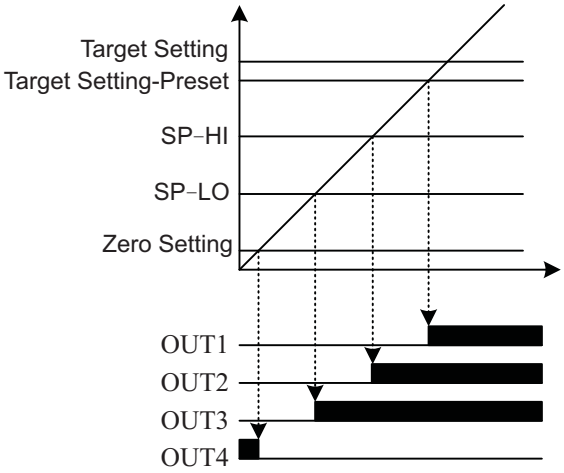
❑ LEVEL



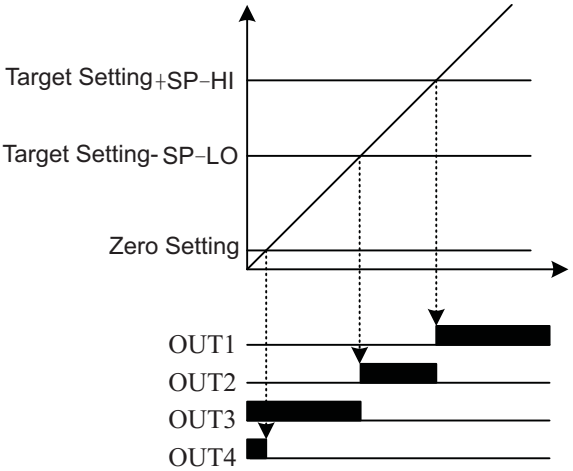
❑ Output Mode (PEAK):



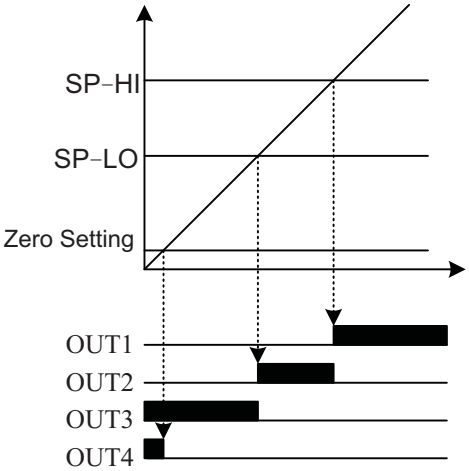
❑ Output Mode 1



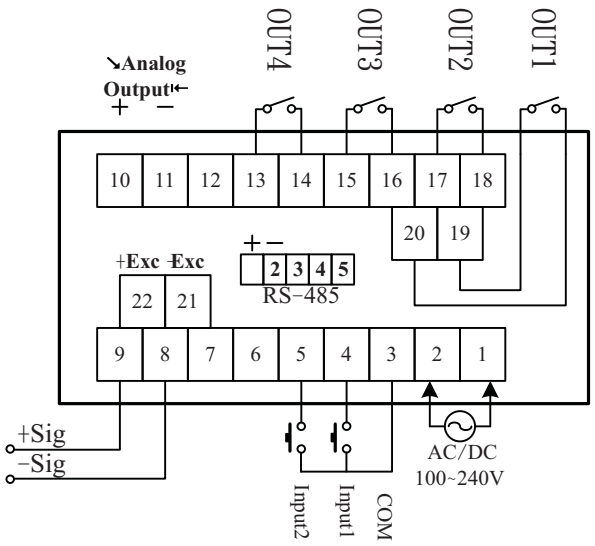
❑ Output Mode 2



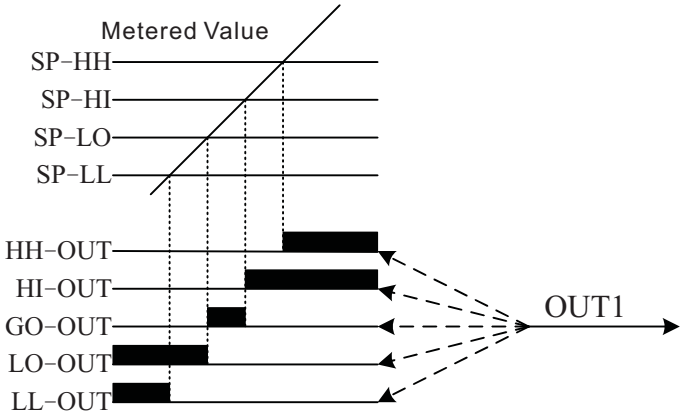
❑ Output Mode 3



❑ External Wiring



❑ Output Setting



❖ Output can be set to correspond with any of the output mode.

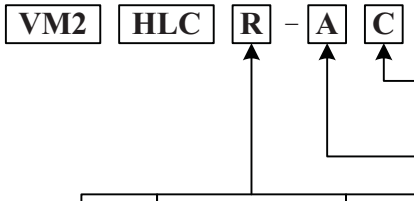
Main Feature

Input Signal	2/4.5 mV/V（Input Range：21mV/42mV）
Aux. Power	5V/100 mA
Frequency	60/50 Hz（Auto switch according to domestic electricity.）
Resolution	500000 scale
Max. Display	-19999 ~ 99999
Accuracy	0.005% FS
Display Size	0.56"(red), 0.3" (green)
Output Method (Optional)	Relay contact output: 1~3 sets（a, b）, 4 sets（a） Analog output: 4~20mA, 1~5V, 0~10V (12/16 bits) Communication output: RS-232, RS-422, RS485（Modbus RTU/ASCII or Stream）

❑ Rated Specification

Power Supply	AC/DC 90 ~ 260V 50/60 Hz
Pwr Consumption	Under 15VA
Insulation Impedance	Above 20MΩ（DC 500V）(between terminal and housing, input and output)
Hi-pot Test	AC 2000V 1 minute (between terminal and housing, input and output)
Noise Susceptibility	2KV 5KHz
Ambient Temperature	0 ~ +50℃
Relative Humidity	25 ~ 85% RH（no condense）
Storage Temperature	-20 ~ +65 ℃
Net Weight	330 grams
Dimension	152(L) X 96(W) X 48(H) mm

❑ Model Explanation:



Index	Output Contact (R)	Analog Output (A)	Communication (C)
0	-	-	-
1	-	4-20mA (12 bits)	RS-232
2	-	0-10V (12 bits)	RS-422
3	-	4-20mA (16bits)	RS-485
4	4 Relay	0-10V (16 bits)	-